UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,785	08/03/2004	Yu-San Lee	12432-US-PA	4784

31561 7590 04/17/2007

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER	
DOTY, HEATHER ANNE	
ART UNIT	PAPER NUMBER
2813	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/710,785	LEE ET AL.	
	Examiner	Art Unit	
	Heather A. Doty	2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *2 and 7* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6 and 8-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the amendment dated 10/19/2006. Claims 1-10 remain pending, with claims 2 and 7 withdrawn from consideration.

Claim Objections

Applicant's amendment to claim 5 has overcome the objection made in the Office action dated 7/21/2006.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimori et al. (U.S. 2002/0102754).

Regarding claim 1, Fujimori et al. teaches a method for fabricating a thin film of an organic electroluminescent device, adapted to form a patterned thin-film layer on a substrate, the method comprising:

- providing a mask (1 in Fig. 9A);
- aligning the substrate and the mask under non-vacuum environment, fastening the mask with the substrate (paragraph 0079); and
- transferring the fastened substrate and mask into vacuum environment, forming the patterned thin-film layer by the mask (Figs. 9A-9C; paragraph 0079).

Regarding claim 4, Fujimori et al. teaches the method for fabricating a thin film of an organic electroluminescent device of claim 1, and further teaches that the patterned thin-film layer is formed by vapor deposition (paragraph 0079 recites an evaporation source).

Regarding claim 6, Fujimori et al. teaches a method for fabricating a thin-film of an organic electroluminescent device, adapted to form a patterned thin-film layer on a substrate, the method comprising:

- providing a film-forming apparatus, comprising at least one vacuum chamber (816 in Fig. 9C) and at least one non-vacuum chamber (716 in Fig. 9A);
- aligning the substrate and the mask in the non-vacuum chamber, fastening the mask with the substrate; and
- transferring the fastened substrate and mask into the vacuum chamber, forming the patterned thin-film layer by the mask (Figs. 9A-9C; paragraph 0079).

Regarding claim 9, Fujimori et al. teaches the method for fabricating a thin film of an organic electroluminescent device of claim 6, and further teaches that the patterned thin-film layer is formed by vapor deposition (paragraph 0079 recites an evaporation source).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. (U.S. 2002/0102754) in view of Boroson et al. (U.S. 2004/0206307).

Regarding claims 3 and 8, Fujimori et al. teaches the method for fabricating a thin film of an organic electroluminescent device of claims 1 and 6 (note 35 U.S.C. 102(b) rejection above), but does not teach that the non-vacuum environment is an environment having water and/or oxygen concentration about from 0.1 to 100 ppm.

Boroson et al. teaches that organic electroluminescent devices are particularly sensitive to water and oxygen contamination (paragraph 0007), and further teaches a deposition system having a controlled atmosphere having water and oxygen concentrations lower than 1000 ppm and as low as 0.001 ppm (paragraph 0031). Boroson et al. does not specifically teach a concentration in the range from 0.1 to 100 ppm.

However, it has been held that "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller* 105 USPQ233, 255 (CCPA 1955).

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use the method taught by Fujimoto et al., and further control the non-vacuum environment to limit the concentration of oxygen and water vapor, since Boroson et al. teaches that these molecules are harmful to organic electroluminescent devices. It would therefore further be obvious to one of ordinary skill

in the art to optimize the oxygen and water vapor concentrations to arrive in the range from 0.1 to 100 ppm.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. (U.S. 2002/0102754) in view of Applicant's Admitted Prior Art (APA).

Regarding claims 5 and 10, Fujimori et al. teaches the method for fabricating a thin film of an organic electroluminescent device of claims 1 and 6 (note 35 U.S.C. 102(b) rejection above), but does not teach that the step of forming the patterned thin film layer comprises forming a first conductive layer on the substrate by using the mask; and forming a second conductive layer on the first conductive layer by using the mask.

However, APA teaches that it is commonplace in the art of manufacturing organic electroluminescent devices to use a mask to form first and second conductive layers on the substrate (instant specification, paragraphs 9-11).

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use the method taught by Fujimori et al., and further form the thin film by forming a first conductive layer on the substrate by using the mask, and then forming a second conductive layer on the first conductive layer by using the mask, as taught by APA, since APA teaches that this method is standard and known in the art of manufacturing organic electroluminescent devices.

Response to Arguments

Applicant's arguments filed 10/19/2006 have been fully considered but they are not persuasive.

On page 9, Applicant argues that Fujimori et al. does not teach fastening the mask with the substrate, as recited in claim 1, but rather teaches placing the substrate on the mask. However, this argument is not persuasive because Fujimori et al. teaches transferring a "substrate-mask unit," which clearly indicates that the substrate and mask are physically joined through some means in order to be transferred together. Claim 1 does not recite a specific means of fastening the mask with the substrate, and thus the teachings of Fujimori et al. read on this element of claim 1.

Applicant additionally argues on page 9 that since Fujimori et al. teaches driving the vacuum pump in the deposition chamber after the substrate-mask unit is transferred to the deposition chamber that Fujimori et al. does not teach transferring the fastened substrate and mask into vacuum environment, as required by claim 1. However, claim 1 does not specify that the fastened substrate and mask are transferred directly into a pre-evacuated chamber. The examiner deems the language of claim 1 broad enough to encompass transferring the fastened substrate and mask into a chamber and then evacuating the chamber, because by the end of that process, the fastened substrate and mask have been transferred into vacuum environment, as required by claim 1.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather A. Doty, whose telephone number is 571-272-8429. The examiner can normally be reached on M-F, 9:30 - 2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached at 571-272-1702. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

had

CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800